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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS**

Appeal No. _____

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In re Application of: MARK S. ANVICK

Serial No.: 09/942,199

Filed: August 29, 2001

For: PUZZLE JOINT SYSTEM

APPELLANTS' BRIEF ON APPEAL

Kenneth W. Float
The Law Offices of Kenneth W. Float
Office address: 2 Shire, Coto de Caza, CA 92679
Mailing address: P. O. Box 80790, Rancho Santa Margarita, CA 92688

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
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In re Application of: MARK S. ANVICK	: Date: November 1, 2003
Serial No.: 09/942,199	: Group Art Unit: 3679
Filed: August 29, 2001	:
For: PUZZLE JOINT SYSTEM	: Examiner: Ryan M. Flandro

APPELLANT'S BRIEF ON APPEAL

Commissioner of Patents and Trademarks
Washington, D. C. 20231

Sir:

This is Appellants' brief on appeal from the decision of the Examiner in the Office Action dated May 2, 2003 finally rejecting Claims 1-17 in the above-identified patent application. This brief is submitted in accordance with the provisions of 37 C.F.R. §1.192.

REAL PARTY IN INTEREST

The real party in interest is Beach Manufacturing, Inc. who received interest in this application by way of assignment.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to appellants, appellant's legal representative, or the assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1-17 are currently pending in this application and were finally rejected in the Office Action dated May 2, 2003. Appellant appeals from this final rejection.

STATUS OF AMENDMENTS

With regard to the status of amendments, no claim-amendments were made in response to the final Office Action dated May 2, 2003. The Claims as they currently stand are presented in the Appendix.

SUMMARY OF INVENTION

The present invention provides for a joint system (20) that may be used to join components, such as wood, and the like, to form a structural unit. An exemplary joint system (20) comprises a first member (11) having a predetermined shape, first and second opposed surfaces, and a first predetermined thickness. A cavity is (20a) formed in the first member (11)

that has a predetermined inner contour, that is exposed at the first surface of the first member (11) and along a portion of an edge of the first member (11). The cavity (20a) has a depth that extends a predetermined distance below the first surface of the first member (11). A second member (12) is provided that has a predetermined shape, first and second opposed surfaces, and a second predetermined thickness. The second member (12) has a tab (22) with an outer contour that substantially matches the inner contour of the cavity (20a) in the first member (11) so that the tab fits within the cavity (20a). The tab (22) preferably a thickness that substantially matches the depth of the cavity (20a). The inner and outer contours have a shape that is similar to a piece of a puzzle, a molar tooth, a dog bone, or a flattened (or portion of) a ball and socket, for example.

ISSUES

The single issue in this appeal is whether Claims 1-17 are unpatentable under 35 U.S.C. § 103(a) over US Patent No. 5,114,265 issued to Grisley in view of U.S. Patent No. 4,809,755 issued to Pontikas.

GROUPING OF CLAIMS

With regard to the specific grounds of rejection that are in issue, it is respectfully submitted that Claims 1-17 stand or fall together.

ARGUMENT

Claims 1-17 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,114,265 issued to Grisley in view of U.S. Patent No. 4,809,755 issued to Pontikas. It is respectfully submitted that the present invention is not obvious in view of the Grisley or Pontikas patents, taken singly or together.

The Grisley patent discloses "An interlocking joint for joining two panels together has curved jigsaw shaped indents and protrusions on edges of both panels that fit together and cannot pull apart. The indents and protrusions are cut by a router with a straight sided cutter. A template is provided for guiding a bushing on a cutter shaft of a router and the template takes into account the bushing having a larger diameter than the cutter. There is also a jig provided that has fingers that are assembled to cut out the interlocking joint with a router." [see Abstract]

The Pontikas patent discloses "Apparatus and a method for forming various types of woodworking joints on workpieces are provided. A series of templates are provided that, when utilized with the appropriate cutting bit for a router produce the desired joint configuration. The router is mounted below a support platform with the cutting bit of the router extending upwardly through a central aperture in the support platform. A guide bushing fixed to the support platform surrounds the cutter bit. A selected template is fixed to fence posts that extend upwardly from the template. The fence posts secure a fence to the template. The fence has clamps that clamp a workpiece to the fence so that the workpiece can be positioned over the

edge patterns on the template. Handles are secured to the fence posts and the fence. With the workpiece in a proper position over the edge patterns on the template, the template, the fence posts, the fence, the handles, and the workpiece are moved as a unit over the router support platform with the edge pattern of the template in contact with the guide bushing surrounding the router cutting bit. The appropriate joint configuration is thereby cut into the workpiece. By changing the template or by changing the angle of the fence or the position of the workpiece, various joint configurations can be produced. Among the joint configurations that can be produced are through dovetail joints, angled dovetail joints, blind dovetail joints, box joints, splined joints, mock dovetail joints, and angled box joints." [see Abstract]

The Examiner essentially argued that the Grisley patent substantially discloses the present invention but admitted that "Grisley lacks disclosure of the first and second members, when joined, being disposed at a predetermined noncollinear angle with respect to each other." The Pontikas patent is cited by the Examiner as teaching "first 114 and second 116 members, when joined, being disposed at a predetermined noncollinear angle with respect to each other in order to provide an angled joint (see figure 20; column 6 lines 61-68)."

The Examiner cited column 4 lines 11-14 and figures 5 and 8 of the Grisley patent as substantially disclosing the present invention. The Grisley patent shows with regard to figures 5 and 8 that the two joined members lie in the same plane (see the dotted line extension 13 in figure 5) and are collinear with each other. [Emphasis added] Each of the pending independent Claims recites that the first and second flat members lie in the same plane and are disposed at a predetermined noncollinear angle with respect to each other. It is respectfully submitted that the Grisley patent does not disclose or suggest this structure, and certainly not without extending its teachings beyond its scope using hindsight reconstruction.

It is respectfully submitted that the Grisley patent does not disclose or suggest that "the first and second flat members, when joined, lie in the same plane and are disposed at a predetermined noncollinear angle with respect to each other". The Grisley patent discloses or suggests right-angled and collinear joints and articles constructed using such joints which does not produce a frame structure or a flat, coplanar, frame structure having flat members, that when joined, lie in the same plane and are disposed at a predetermined noncollinear angle with respect to each other. It is respectfully submitted that no frame structures whose members lie in the same plane and are disposed at a predetermined noncollinear angle with respect to each other are disclosed or suggested in the Grisley patent.

It is respectfully submitted that the Grisley patent discloses a joint that is only used for joining members at 90 degree, or right, angles and does not produce a substantially flat frame structure. In contrast, the present invention provides for joining members located in the same plane, which provides for flat joints, and which provides for a frame structure. The Grisley patent does not disclose or suggest construction of a frame structure using the joints disclosed therein.

It is also respectfully submitted that any characterization of the teachings of the Grisley patent as disclosing or suggesting that the joint may be used to produce a flat frame structure is a distortion of the express teachings of the Grisley patent and amounts to hindsight reconstruction on the part of the Examiner in order to reject the present invention. The only teaching of a joint system having flat members that lie in the same plane, so as to form a frame structure, is found in the present application.

With regard to the Grisley patent, it is respectfully submitted that none of the joints disclosed therein have a structure wherein a cavity is formed in a first flat member that has a depth that extends a predetermined distance below the first flat surface, and wherein a second flat member has a tab formed therein that has a thickness that substantially matches the depth of the cavity formed in the first flat member. In the present invention, the cavity is formed in the first member that is about one half the thickness of the first member, and the mating, interlocking tab has a thickness that is about one half the thickness of the second member so as to fit in the cavity in the first member.

It is respectfully submitted that this is not the case with the joints disclosed in the Grisley patent. Note that, in the planar joint structure shown in Fig. 5, the routed joints and mating cavities are the full thickness of the wood piece. There is no disclosure or suggestion in the Grisley patent regarding the use of interlocking joints wherein the indents and protrusions are a portion of the thickness of the respective wood pieces, as is employed in the present invention.

Similarly, with regard to the Pontikas patent, it is respectfully submitted that none of the joints disclosed therein have a structure wherein a cavity is formed in a first flat member that has a depth that extends a predetermined distance below the first flat surface, and wherein a second flat member has a tab formed therein that has a thickness that substantially matches the depth of the cavity formed in the first flat member. The only joint structures relating to the formation of planar structures (shown in Fig. 20) uses a plurality of dovetail joints wherein the protrusions and cutouts are the entire thickness of the respective wood pieces. There is no disclosure or suggestion in the Grisley patent regarding the use of interlocking joints wherein the indents and protrusions are a portion of the thickness of the respective wood pieces, as is employed in the present invention.

It is respectfully submitted that the combined teachings of the cited patents do not produce the present invention. In the presently claimed invention, and with reference to Figs. 1 and 2, the first flat member shown in Fig. 1 has a cavity that is about one half of the thickness of the first member, so that a the flat member has a solid body except for the section where the cavity is removed. Looking at Fig. 2, it is clear that the tab has a thickness that is also about one half of the thickness of the second member. Thus, when the tab of the second member is inserted into the cavity of the first member, the peripheral edge of the tab is in substantial contact with the inner edge of the cavity. Also, the lower surface of the tab is in substantial contact with the bottom surface of the cavity. Furthermore, the lateral surface of the end of the

second member below the tab is in substantial contact with the abutting side surface of the first member. The structures recited in independent Claims 1, 6 and 12 are configured to create this. This is not the case with the joints disclosed in the Grisley and Pontikas patents.

In the Grisley joint shown in Fig. 4, the lower (first) member has cavities that are a portion of the depth of the member. However, the tabs are the full depth of the upper (second) member. There is clearly no disclosure or suggestion in the Grisley patent to form a tab that is only a portion of the thickness of the second member. Therefore, it is respectfully submitted that the respectfully submitted that the does not disclose or suggest the presently claimed puzzle joint.

With regard to the Pontikas patent, it discloses a Dado joint used to make a flat picture frame. Substituting the joint disclosed in the Grisley patent into the Pontikas frame structure does not produce the presently claimed invention. Note that the Pontikas joint has tabs and cavities that are the full thickness of the respective parts.

Thus, neither of the cited patents disclose or suggest a joint wherein the members that are joined have a cavity formed in one member that is only a portion of the thickness of the member, and a tab formed in the other member that is only a portion of the thickness of the other member.

Therefore, with specific regard to independent Claim 1, it is respectfully submitted that the Grisley and Pontikas patents, taken singly or together, do not disclose or suggest a joint system comprising "a cavity formed in the first flat member ... that has a depth that extends a predetermined distance below the first flat surface, and wherein the depth of the cavity is a predetermined portion of the thickness of the first flat member" and "a second flat member ... having a tab ... that ... fits within the cavity, which tab has a thickness that substantially matches the depth of the cavity formed in the first flat member." [Emphasis added] Thus, in the invention recited in claim 1, the tab and the cavity have a thickness and depth that are a portion of the overall thickness of the first and second flat members. This is not the case with the joints disclosed in the Grisley and Pontikas patents.

Therefore, it is respectfully submitted that Claim 1 is not obvious in view of, the Grisley and Pontikas patents, taken singly or together. Reversal of the Examiner's rejection of Claim 1 is respectfully requested.

Dependent Claims 2-5 are considered patentable based upon their dependence from allowable Claim 1. Accordingly, reversal of the Examiner's rejection of Claims 2-5 is respectfully requested.

With regard to independent Claim 6, it recites that the first flat member comprises a single cavity, and that the single cavity has a depth that extends a predetermined distance below the first flat surface. Furthermore, Claim 6, recites that the second flat member comprises a single tab that fits within the single cavity.

With regard to the Grisley patent, it is respectfully submitted that all of the joints disclosed therein have a plurality of "curved jigsaw puzzle shaped indents with protrusions

between the indents". It is respectfully submitted that the Grisley patent does not disclose or suggest the use of a single protrusion used in conjunction with a single mating cavity to interlock two mating flat members. All of the joints disclosed in the Grisley patent involve the use of a plurality of "curved jigsaw puzzle shaped protrusions with curved jigsaw puzzle shaped indents between the protrusions." There is no disclosure or suggestion in the Grisley patent regarding the use of a single protrusion that mates with a single indent or cavity.

The Pontikas patent, with reference to Fig. 20, discloses formation of a plurality of dovetail joints that are used to interconnect abutting ends of two members at a corner. With regard to all of the embodiments disclosed in the Pontikas patent, none of them relate to the use of a single protrusion used in conjunction with a single mating cavity to interlock two mating flat members. All of the joints disclosed in the Pontikas patent involve the use of a plurality of interlocking joints. There is no disclosure or suggestion in the Pontikas patent regarding the use of a single protrusion that mates with a single cavity.

Furthermore, as was argued with regard to Claim 1, it is respectfully submitted that the Grisley and Pontikas patents, taken singly or together, do not disclose or suggest the use of a tab and cavity that have a thickness and depth that are a portion of the overall thickness of the first and second flat members. All of the joints disclosed in the Grisley and Pontikas patents have dovetails and mating cavities that are the entire thickness of the respective wood pieces.

Therefore, with regard to Claim 6, it is respectfully submitted that the Grisley and Pontikas patents, taken singly or together, do not disclose or suggest a first flat member ... that "comprises a single cavity having a predetermined inner contour, which single cavity is exposed at the first flat surface, and is exposed along a portion of an edge of the first flat member, which single cavity has a depth that extends a predetermined distance below the first flat surface" and "a second flat member ... that comprises a single tab with an outer contour that substantially matches the inner contour of the single cavity and that fits within the single cavity.

In the present invention, the tab and cavity have a thickness and depth that are a portion of the overall thickness of the first and second flat members. This is not the case with the joints disclosed or suggested by the Grisley and Pontikas patents, taken singly or together.

Therefore, it is respectfully submitted that Claim 6 is not obvious in view of, the Grisley and Pontikas patents, taken singly or together. Accordingly, reversal of the Examiner's rejection of Claim 6 is respectfully requested.

Dependent Claims 7-11 are considered patentable based upon their dependence from allowable Claim 6. Accordingly, reversal of the Examiner's rejection of Claims 7-11 is respectfully requested.

Claim 12 recites a joint system comprising first, second and third flat members as are shown in the drawing figures of the present application. It is respectfully submitted that Claim 12 recites the allowable subject matter that is present in Claim 1 regarding the fact that the flat members comprise tabs and cavities that are portions of the thicknesses of the respective flat

members. As was argued above, this is not disclose or suggested by the Grisley and Pontikas patents, taken singly or together.

With specific regard to Claim 12, it is respectfully submitted that the Grisley and Pontikas patents, taken singly or together, do not disclose or suggest a first flat member that "comprises a cavity having ... a depth that extends a first predetermined distance below the first flat surface", a second flat member that "comprises a cavity" that "has a depth that extends a second predetermined distance below the first flat surface", and "a third flat member ... that comprises first and second tabs with outer partially curved contours that substantially match the respective inner partially curved contours of the first and second cavities and that fit within the respective first and second cavities, and wherein the first, second and third flat members, when joined, lie in the same plane and are disposed at a predetermined noncollinear angles with respect to each other."

Therefore, it is respectfully submitted that Claim 12 is not obvious in view of, the Grisley and Pontikas patents, taken singly or together. Accordingly, reversal of the Examiner's rejection of Claim 12 is respectfully requested.

Dependent Claims 13-17 are considered patentable based upon their dependence from allowable Claim 12. Accordingly, reversal of the Examiner's rejection of Claims 13-17 is respectfully requested.

In view of the above, it is respectfully submitted that Claims 1-17 are not obvious in view of the cited patents, taken singly or in combination, and are therefore patentable. Therefore, it is respectfully submitted that the rejection of Claims 1-17 by the Examiner was erroneous, and reversal of the Examiner's decision is respectfully requested.

Respectfully submitted,



Kenneth W. Float
Registration No. 29,233

The Law Offices of Kenneth W. Float
Office address: 2 Shire, Coto de Caza, CA 92679
Mailing address: P. O. Box 80790, Rancho Santa Margarita, CA 92688
Telephone: (949) 459-5519
Facsimile: (949) 459-5520
Email: kwfloat@floatlaw.com

APPENDIX

Claims 1-17 presented below are pending in this application.

1. A joint system for producing a flat, coplanar, frame structure, comprising:
a first flat member having a predetermined shape, first and second opposed flat surfaces,
and a first predetermined thickness;

a cavity formed in the first flat member that has a predetermined inner partially curved contour, which cavity is exposed at the first flat surface of the first flat member and along a portion of an edge of the first flat member, which cavity has a depth that extends a predetermined distance below the first flat surface, and wherein the depth of the cavity is a predetermined portion of the thickness of the first flat member; and

a second flat member having a predetermined shape, first and second opposed flat surfaces, and a second predetermined thickness, and having a tab with an outer partially curved contour that substantially matches the inner contour of the cavity in the first flat member so that the tab fits within the cavity, which tab has a thickness that substantially matches the depth of the cavity formed in the first flat member, and wherein the first and second flat members, when joined, lie in the same plane and are disposed at a predetermined noncollinear angle with respect to each other.

2. The joint system recited in Claim 1 wherein the thicknesses of the first and second members are substantially the same.

3. The joint system recited in Claim 1 wherein the inner contour of the cavity and the outer contour of the tab are sized to allow a glue to be disposed therebetween.

4. The joint system recited in Claim 1 wherein the inner partially curved contour of the cavity and the outer partially curved contour of the tab have the shape of a piece of a puzzle.

5. The joint system recited in Claim 1 wherein the inner partially curved contour of the cavity and the outer partially curved contour of the tab have the shape of a molar tooth.

6. A joint system for producing a flat, coplanar, frame structure, comprising:
a first flat member having a predetermined shape, first and second opposed flat surfaces,
and a first predetermined thickness which first member comprises a single cavity having a predetermined inner contour, which single cavity is exposed at the first flat surface, and is exposed along a portion of an edge of the first flat member, which single cavity has a depth that extends a predetermined distance below the first flat surface; and

a second flat member having a predetermined shape, first and second opposed flat surfaces, and a second predetermined thickness, that comprises a single tab with an outer contour that substantially matches the inner contour of the single cavity and that fits within the single cavity, and wherein the first and second flat members, when joined, lie in the same plane and are disposed at a predetermined noncollinear angle with respect to each other.

7. The joint system recited in Claim 6 wherein the depth of the cavity and the thickness of the tab are substantially the same.

8. The joint system recited in Claim 6 wherein the thicknesses of the first and second members are substantially the same.

9. The joint system recited in Claim 6 wherein the inner contour of the cavity and the outer contour of the tab are sized to allow a glue to be disposed therebetween.

10. The joint system recited in Claim 6 wherein the inner contour of the cavity and the outer contour of the tab have the shape of a piece of a puzzle.

11. The joint system recited in Claim 6 wherein the inner contour of the cavity and the outer contour of the tab have the shape of a molar tooth.

12. A joint system for producing a flat, coplanar, frame structure, comprising:
a first flat member having a predetermined shape, first and second opposed flat surfaces, and a first predetermined thickness, which first flat member comprises a cavity having a predetermined inner partially curved contour, which cavity is exposed at the first flat surface, and is exposed along a portion of an edge of the first flat member, which cavity has a depth that extends a first predetermined distance below the first flat surface;

a second flat member having a predetermined shape, first and second opposed flat surfaces, and the first predetermined thickness, which second flat member comprises a cavity having a predetermined inner partially curved contour, which cavity is exposed at the first flat surface, and is exposed along a portion of an edge of the second flat member, which cavity has a depth that extends a second predetermined distance below the first flat surface; and

a third flat member having a predetermined shape, first and second opposed flat surfaces, and a second predetermined thickness, that comprises first and second tabs with outer partially curved contours that substantially match the respective inner partially curved contours of the first and second cavities and that fit within the respective first and second cavities, and wherein the first, second and third flat members, when joined, lie in the same plane and are disposed at a predetermined noncollinear angles with respect to each other.

13. The joint system recited in Claim 12 wherein the depths of the first and second cavities and the thicknesses of the first and second tabs are substantially the same.

14. The joint system recited in Claim 12 wherein the thicknesses of the first, second and third second members are substantially the same.

15. The joint system recited in Claim 12 wherein the inner partially curved contours of the first and second cavities and the outer partially curved contours of the first and second tabs are sized to allow a glue to be disposed therebetween.

16. The joint system recited in Claim 12 wherein the inner partially curved contours of the first and second cavities and the outer partially curved contours of the first and second tabs have the shape of a piece of a puzzle.

17. The joint system recited in Claim 12 wherein the inner partially curved contours of the first and second cavities and the outer partially curved contour of the first and second tabs have the shape of a molar tooth.